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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,916

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EXAMINER

NWAONICHA, CHUKWUMA O

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

05/11/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,916	Applicant(s) DE KLEINE ET AL.	
	Examiner CHUKWUMA O. NWAONICHA	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2009 and 18 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 17 February 2009 and 18 February 2009.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 1-10 and 13-20 are pending in the application.
4. The 112 rejection is withdrawn following Applicants amendment.
5. The 103 rejection is withdrawn in favor of this rejection.

Applicants' arguments and declaration filed 17 February 2009 and 18 February 2009 have been fully considered but they are moot in favor of the new grounds of rejection.

New Rejection

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-10 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardy, Sr. et al., {US 4,034,023} in view of Giolito et al. {US 3,931,367} and further in view of Bright et al. {US 7,166,736}.

Applicants claim a process comprising the steps of reacting a dichloromonophenyl phosphate and monochlorodiphenyl phosphate with an aliphatic alcohol, in the presence of a Lewis acid catalyst, in the absence of solvent, at a temperature of above 60 to 200°C, and at a pressure of 0.001 to 1.1 bar absolute pressure, and sparging the reaction mixture with an inert carrier gas if the pressure is above 0.67 bar absolute pressure; wherein all the other variables are as defined in the claims.

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Hardy, Sr. et al. teach applicant's claimed process of making mixed phosphate ester compositions consisting essentially of 10% to 19% tributyl phosphate, 62% to 80% dibutyl phenyl phosphate, and 10% to 19% butyl diphenyl phosphate which comprises forming a first reaction product by reacting phosphorus oxychloride with phenol in a molar ratio of 1:0.8 to 1.0 until less than 1% unreacted phenol is present in the reaction mixture, reacting the first reaction product with excess n-butanol at a temperature 35°C to about 150°C at 5 to 100 mm Hg to prepare a crude mixed phosphate ester composition comprising tributyl phosphate, dibutyl phenyl phosphate and butyl diphenyl phosphate, and purifying the crude composition leaving a substantially pure mixed

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phosphate ester composition. The use of other aliphatic alcohol is also taught and the reaction was conducted in the presence of Lewis acid catalyst and in the absence of a solvent. See columns 4 and 5, example 1.

Ascertainment of the difference between the prior art and the claims (M.P.E.P..

§2141.02)

Hardy, Sr. et al. process of making mixed phosphate ester differs from the instantly claimed process in that applicants' claim a process of sparging the reaction medium with an inert carrier gas while Hardy, Sr. et al. is silent about this procedure.

However, the secondary reference of Giolito et al. teaches a process of making mixed phosphate ester wherein the reaction medium is sparged with an inert carrier gas. See column 4, line 66 - line 68, and example 1.

On the other hand, the reference of Bright et al. teaches a process of making mixed phosphate ester with Lewis acid vacuum at a temperature of about 80°C to about 180°C, and a high yield of about 90%. See column 2, line 43 - line 64, and the General Procedure.

Finding of prima facie obviousness--rational and motivation (M.P.E.P.. §2142-

2143)

The instantly claimed process of making mixed phosphate ester would have been suggested to one of ordinary skill in view of the teachings of the process of Hardy, Sr. et al., Giolito et al. and Bright et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the process conditions, the pressure, the

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temperature and catalyst from the teachings of Hardy, Sr. et al., Giolito et al. and Bright et al. to arrive at the instantly claimed process for preparing a mixed phosphate ester. Said person would have been motivated to practice the teaching of the references cited because they demonstrate that phosphate esters are useful industrial chemicals. The Examiner notes that varying the reaction condition, the pressure, the temperature reactants or the additives in a chemical reaction is a well-known chemical practice to optimize the process efficiency of the system and does not constitute a patentable distinction **absent** a showing of criticality. In re Aller, 220 F.2d 454, 105 U. S. P. Q. 233 (C. C. P. A. 1955). Moreover, all the claimed elements were known in the prior art references cited and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in art at the time of the invention. Therefore, the instantly claimed invention would therefore have been obvious to one of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chukwuma O. Nwaonicha/
Examiner, Art Unit 1621

/Karl J. Puttlitz/
Primary Examiner, Art Unit 1621